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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,777	04/14/2004	Aleksey Yurievich Kolesnychenko	081468-0309196	4703

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EXAMINER

MATHEWS, ALAN A

ART UNIT

PAPER NUMBER

2882

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DELIVERY MODE

01/05/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/823,777

Applicant(s)

KOLESNYCHENKO ET AL.

Examiner

ALAN A. MATHEWS

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-20 and 22-48 is/are pending in the application.
- 4a) Of the above claim(s) 6, 13, 14, 26, 31, 33, 41-43 and 48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7-12, 15-25, 27-30, 32, 34-40 and 44-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 13, 2009, has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1 - 3, 5, 7 - 12, 15 - 20, 22 - 25, 27 - 30, 32, 34 - 40, 44 - 47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recitation "the majority of supplied liquid is confined to the

localized area" (recited in independent claims 1, 19, and 28) is not found in the specification. In particular, the specification does not recite the word "**majority**".

Claim Rejections - 35 USC § 102

4. Claims 1, 2, 7, 8, 9, 12, 15-20, 22, 23, 25, 27, 28, 30, 32, and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Santen et al. (U. S. Patent Application Publication No. 2005/034815 A1). Van Santen et al. '815 discloses in figure 1 a lithographic apparatus with a support structure MT configured to hold a patterning device MA and a substrate stable WT configured to hold a substrate W. Element PL is the projection system. Figure 4 and paragraphs # 0052 - # 0062 disclose a liquid supply system 10 which supplies liquid to a localized area (see in particular paragraphs # 008 and # 0018 which discuss supplying to a **localized area and collecting liquid that has spilled from the localized area of the supply system**). Figure 4 and paragraph # 0060 disclose an outlet 60 which removes immersion liquid that is spilled from the liquid supply system (which is similar in many ways to outlet "OUT" in figure 2 of the instant application. Outlet 60 would help confine the liquid to a localized area on the substrate, since outlet 60 is shown in figure 4 to be above the substrate W. **In addition to outlet 60, one or more outlets 63 and 66** may be provided on the top of the substrate table WT (see paragraph # 0060). With respect to claim 8, the one or more outlets 63 could be considered a plurality of discrete outlets. A rim 50 (projection) may also be provided. Rim 50 in figure 4 is a barrier which comprises a projection

which projects out above an upper surface of the substrate table and outlet 63 is considered to be a groove recessed into an upper surface of the substrate table. With respect to claims 12 and 25, element 66 is considered to be a further groove. With respect to claims 15, 27, and 28, element 66 is considered to be the drainage ditch or additional barrier, surrounding an outer peripheral edge of the substrate W. Barrier 50 and 63 is positioned radially outwardly of the drainage ditch 66. With respect to claims 16 and 35, barrier 50 extends substantially around an outer edge of portion of the substrate table. With respect to claim 17, figure 4 discloses that barrier 50 additionally surrounds areas of an upper surface of the substrate table which are not covered by the substrate W. With respect to claims 18 and 36, barrier 50 additionally surrounds sensor 70 and/or closure member 80. With respect to claims 7, 22, and 34, low pressure supply would remove liquid from the barrier.

With respect to Applicant's arguments, Applicant has stated that Van Santen et al. does not disclose supplying a liquid to substantially only a localized area of the substrate, of the substrate table, or of both --- *wherein the majority of supplied liquid is confined to the localized area* ---. But it is first noted that the specification of the instant application does not recite the term "**majority**" in the recitation "the majority of supplied liquid is confined to the localized area" found in independent claims 1, 19, and 28. As a result, claims 1 - 3, 5, 7 - 12, 15 - 20, 22 - 25, 27 - 30, 32, 34 - 40, 44 - 47 were rejected above under 35 U.S.C. 112, first paragraph. Applicant's system appears to have a localized liquid supply system that is not efficient and that **spills** liquid that **escapes** from the liquid supply system, with the result that the immersion liquid gets on

the substrate table. But Applicant states in paragraph # 0006 in the Background of the instant application "if a liquid supply system fails, **immersion liquid can easily escape**. **Furthermore, if the localized area liquid supply system is not efficient, immersion liquid can be left behind on the substrate table** and then can leave the substrate table under the forces generated by the acceleration of the substrate table". Applicant also states in paragraph # 0015 of the instant application "Using the barrier, **liquid spilt by the liquid supply system or escaping from the liquid supply system** may be collected----". Applicant further states in paragraph # 0024 of the instant application "The barrier extends essentially around an outer edge or portion of the substrate table. Thus, with any relative position of the liquid supply system on the substrate table, **the barrier can be used to collect liquid which is spilled**". Applicant's system appears to have a localized liquid supply system that is not efficient and that **spills** liquid that **escapes** from the liquid supply system, with the result that the immersion liquid gets on the substrate table. With regard to the rejection above, Van Santen '815 states in paragraph # 0018, "**In this way immersion liquid which has spilled from the localized area of the supply system (i.e. the area under the projection system) may be collected -----**". Thus, Van Santen '815 is also concerned with and discloses collecting liquid that spills from the localized area of the supply system like Applicant's claims in the instant application. In addition, element 60 would appear to appear to keep the liquid localized.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

5. Claims 1, 2, 7, 8, 9, 15-20, 22, 23, 28, 32, and 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Lof et al. (U. S. Patent Application Publication No. 2004/0160582 A1). Figure 1 discloses a support structure configured to hold a patterning device MA. Substrate table WT holds a substrate W. Element PL is the projection system. Figure 2 discloses a liquid supply system including elements 12 and 13. Paragraph # 0108 discloses that the liquid supply system provides liquid on only a localized area of the substrate. Figure 17 and paragraphs # 0172 discloses a barrier 220 which is spaced apart from and positioned radially outward from 46 (which can be considered a **groove** as disclosed in paragraph # 0126). Barrier 220 projects above the substrate W in figure 17. With respect to claim 2, barrier (projection) 220 projects out of the upper surface of the substrate table. With respect to claim 15, figure 17 discloses two projections 220. With respect to claim 18, figure 17 discloses a sensor 220. With respect to claim 19, element 220 is a projection and element 46 is considered to be a groove. It is further noted that figure 8a and paragraphs # 0135- # 0140 discloses another embodiment having a barrier including 117 which is spaced apart from and

positioned radially outward from element 46 which can be considered a drainage ditch. Element 117 is a projection projecting above an upper surface of the substrate table ash shown on the right of figure 8a.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN A. MATHEWS whose telephone number is (571)272-2123. The examiner can normally be reached on Monday through Friday from 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alan A. Mathews/
Primary Examiner
Art Unit 2882

/AM/